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UTCS ComputerNews

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Let's Talk About It: Real Money Charging

[The following article is not subject to editorial review.]

How Did It Work the First Year

Gentle Reader: I've spared you my acerbic comments for a while, but this topic is important enough that I can't let another issue go by without addressing it. We have gone through more than a year with real money budget allocations replacing entitlements for purchasing computing services. Nearly 1.5 million dollars of continuing money from the UTCS budget has been disbursed into department and faculty accounts. The use of this money is restricted, in that it can only be spent on computing. However, it does not have to be spent at UTCS.

In the 84/85 fiscal year, UTCS earned about $450,000 less than our budgeted income target of $3,200,000. In simple terms, this meant that we had a real bottom line deficit of this amount. The $450,000 was made up of two components. There was $200,000 which just wasn't spent at all, but was carried forward into this year. About $250,000 actually was spent, but not for UTCS services.

The first year of as drastic a change as this is probably not a proper reflection of the longer term effects we might expect. Our users have been pretty cautious so far, either seeming to be worried about running out of money or to be trying to accumulate money for some major systems purchase.

We covered last year's deficit with a contingency fund we had accumulated and carried forward specifically for this purpose. We had always anticipated that there would be some diversion of funds from UTCS upon monetization, but we could only put a lower bound on how much would be diverted. In anticipation of some shortfall in revenue we have adjusted our operation to lower our expenses. We are now operating at an expenditure level where we can make up for a $450,000 loss of income. Our experience so far this fiscal year is that, even with our reduction in expenses we will incur another sizeable deficit, which will be much harder to accommodate particularly if it represents a permanent trend.

Monetization undoubtedly serves the University as a whole well, but it has definitely varying utility for different groups. Those who always planned to take their share of monetized entitlements and use them to buy their own equipment and micros (maybe even noncomputing things if they are clever enough), are served very well. Those primarily paying for computing from research funds are able to buy more computing per dollar since we lowered our rates as part of the process. Those who had primarily been using entitlements and who were intending to continue to use UTCS services, lost the buffer entitlements provided. Unless they were really average users they also usually lost the ability to buy the same mix and amount of computing as before. Finally, for UTCS, so far, monetization seems to make retaining a viable, meaningful central computing services function rather difficult.

The idea behind monetization is that if departments are given the flexibility to spend their computing money anywhere, better use of it will result. This is based on an interesting assumption; that all the options a user or department may consider to meet their computing needs are evaluated against their true costs. The option of service from UTCS, particularly the use of our central machines, certainly is priced on a fully costed basis. Other alternatives may or may not be. If a department consciously decides to run a bare bones service and absorb certain support costs by using pieces of its people's time, then it has really fully costed the service, even if all costs can't necessarily be expressed only in monetary terms.

continued...

Let's Talk About It: continued

We are discovering some unanticipated results when we analyze the costs for our management of facilities owned by others. It turns out that if the facilities managed are IBM mainframes, of whatever sizes, then it is less expensive to offer equivalent service on a large central system. This is particularly true if the facility's user base is broad and requires support for a number of application packages.

UTCS' central machine services are the base on which many of our facilities management services rest. One of the consequences of the reduced viability of the central machine services is that this base is threatened. The base is required because of the granularity of the resources necessary. A single person can contribute to the overall effort needed to support, operate or manage a number of different sytems, both central and facilities. Without the central service which normally pays for most of his time, the cost to facilities that only use "arms and legs" becomes prohibitive.

Before this fiscal year began, I sent a letter to Principals, Deans, Directors and Chairmen asking what level of expenditures we might expect at UTCS. I got a miniscule response, about three letters. I would like to ask again at what level (or even whether) you intend to spend at UTCS. I am most interested in any department that will be permanently withdrawing funds they spent in the past with us. If we know our deficit is at least partly temporary we can plan how to ride through it. Without this information we will have to plan on reducing our expenses even further, and consequently the resources we can afford to apply to the services we offer. This will inevitably lead to lower service levels or the elimination of whole services. With the proper information we can plan any moves well in advance and come up with an orderly transition. Let me hear from you!

No Free Lunch

Now I'd like to discuss another topic which is very relevant to a situation where we are running a deficit because there is not enough revenue coming in from our machine services. We have historically had a job class on our academic IBM MVS computer called Class E. It was instituted back in the good old days before monetization (and before my time). It was based on one of two premises and which one really held doesn't matter. The first would be that the use of the computer during prime time (during the day, basically) paid for the whole thing. The second would be that the whole thing was paid for generally, to a great extent by a central subsidy (the famous entitlements). In either case, it didn't make sense to have "spare" cycles going to waste during inconvenient times like the middle of the night. Class E was set up to charge for the use of the computer at a very low rate, to help spread the usage over the whole day and to totally utilize the computer's capacity for useful work.

I discovered, just as this issue was going to press, that we have a plug for Class E in our column in the latest issue of the *Bulletin*. Our decision to change Class E and the article obviously passed each other in the night. I must fall on my sword and acknowledge that I didn't keep informed on what was being written for the *Bulletin*. However, all my comments hold, in spite of what is written in the *Bulletin*. Don't count on Class E as a way to stretch your computing dollar, at least not to the extent it did in the past.

In our present situation, Class E in its present form is not relevant any more. First, prime time or no, the computer is not paying its way, from paying customers and certainly not from any central subsidy. Therefore there are no "spare" cycles. "Spare" cycles only make sense when the system is fully funded already, and we are just trying to fully utilize it or to influence when people run. When users run their jobs now is immaterial since the system is never that heavily loaded.

continued...

Let's Talk About It: continued

We intend to modify Class E substantially or replace it with a service where we truly enforce the former Class E limits and timing and where we give only a fairly nominal discount. We will do this at our earliest opportunity, flying in the face of our stated intention not to raise our rates during the year (and that is my personal decision). It would be irresponsible to offer such a bargain basement service while losing our shirts, particularly when any valid reason for offering it has long since evaporated. The situation is sort of like the fellow who ran a shoe store and lost a penny on every pair of shoes he sold. When asked (before he went bankrupt!) how he intended to stay in business he stated that what he lost on every shoe he made up in volume of sales. We are certainly not going to take drastic action to cover our shortfall in income simply to implicitly subsidize those using the old Class E. This makes even less sense when we consider the massive amounts of money which have been diverted from being spent at UTCS.

Dr. Warren Jackson
Director, UTCS

Subscription Renewals

It is now time for *COMPUTERNEWS* readers to renew their subscriptions. Because all subscriptions run from January to January, even new users, who become subscribers automatically when they open their accounts, must renew at this time if they wish to continue receiving *COMPUTERNEWS.*

To renew, just fill out the *Annual COMPUTERNEWS Subscription Renewal Form* appearing at the back of this issue and the November/December issue. Any subscription not renewed by the beginning of January will be dropped.

Please remember that this policy helps us keep our mailing costs down and continue to provide the newsletter free of charge.

Martha Parrott

Microcomputer News

Software Reviews

We have added a number of software reviews to the UTCS Microcomputer Bulletin Board System (BBS). These reviews will be incorporated in future editions to the *Academic's Guide to Microcomputer Systems* but are made available in the BBS first. Note that the BBS review versions are in plain ASCII so that they can be printed on *any* printer; this means that such features as boldface, underscores, and italics have been removed.

Recent reviews (for IBM PC or compatibles) include:

- **Nota Bene:** academic word processor with some textual database capabilities, recently endorsed by the Modern Languages Association of America.
- **DATAEASE:** relational database management system, especially easy to learn and use.

Reviews planned for the near future are:

- **Clipper** and **dB III:** dBASE III compilers.
- **DR GRAPH** and **DR DRAW:** graphing packages.

continued...

Microcomputer News continued

- **Ask Sam:** freeform textual database manager.

Printed instructions for accessing the UTCS Microcomputer BBS are available from the UTCS Information Office.

Seminars

The UTCS Micro Support Group offers two free seminars throughout the academic year. Please call Irene Rosiecki at 978-4565 to register.

- **Care and Feeding of Your Microcomputer:** Aimed at people who have recently begun to use micros, or are considering using them, this 2-hour seminar offers overall guidance on the basics of computer ownership. An introduction to microcomputer terminology is given, with an explanation of what the various parts of a micro do. A discussion is then presented on how to set up your machine, proper treatment of the machine and accessories, and what to do in case of problems, including a number of useful tips on getting the most from your micro. This seminar is *recommended* for beginning users of micros.
- **Micro-to-Mainframe Transfer:** Aimed at people who need to know how to move data between microcomputers and UTCS mainframe computers, this seminar features a live demonstration of the use of the KERMIT protocol, transferring files to and from a PC, including use of the UTCS File Transfer Service. Some discussion of IBM PC KERMIT as a terminal emulator is also presented.

User Group Meetings

Proposed dates, times, and locations for campus User Group meetings are listed below. This information is also published in HOTNEWS on UTCS mainframes, and on the Microcomputer Bulletin Board System, prior to each meeting. The IBM PC and the CP/M Users Groups have no membership dues, and meetings are open to all University users. The APPLE Users Group requires a yearly membership fee; you may register at any meeting.

If you would like more information, please contact the people listed below.

- *IBM PC & Compatibles Users Group:* Contact: UTCS Micro Support Group, 978-8701. All meetings are Tuesdays, 4:00-5:30 p.m., in Room 137, McLennan Labs, 60 St. George St. Dates and proposed featured topics are:
  - September 24:

    Demonstrations of **Nota Bene,** an academic word processing package with some textual database capabilities; **Fancy Font** "personal typesetting" program for Epson dot matrix printers.
  - October 22:

    Demonstration of **T^3** a powerful multilingual and scientific word processing package.
  - November 26: (to be announced)

  CP/M Users Group: Contact: Dave Johnson, 920-2877. All meetings are Mondays, 4:00-5:30 p.m., in Room 221, McLennan Labs, 60 St. George St. Dates and proposed featured topics are:

  - October 28:

    Turbo Pascal, from Borland International, probably the most popular version of a Pascal compiler for micros; public-domain software exchange; choose future topics: possibly WordStar, S-100 systems, public-domain software, or new products (e.g., ATARI ST, Commodore 128).
  - November 25: (to be announced)
  - December 16: (to be announced)

continued...

Microcomputer News continued

- *APPLE Computer Users Group:*

  Contact: Tom Sommerville, 532-0922. Meeting notices will be posted on the UTCS Microcomputer BBS; schedule is not yet available.

User groups provide an excellent means of getting to know other users with similar interests, and sharing information. Each of the groups mentioned here includes people with varying levels of expertise and experience, from beginner to expert. Why not join a Users Group today?

Paul Roth

Microcomputer Software: Advantages of a Programming Language

Back in the bad old days, particularly before the advent of the personal computer, programming was almost entirely the activity of highly trained specialists. This is largely still the case, but there is an increasing tendency for microcomputer software to allow a relative novice to design and implement procedures in some special language provided for the purpose. Two significant examples are the database manager dBASE (II or III) and the academic word processor Nota Bene. These procedures are in reality as much computer programs as any written in FORTRAN or Pascal, although the special languages in question are far more limited.

An academic user of microcomputers may be understandably reluctant to become a programmer (it is a time-consuming profession), but limited skills in programming are no longer so difficult to acquire, especially in terms of these special languages. The potential benefits of possessing such skills can be great. Before I mention these, however, let us look briefly at the problems that sometimes arise from a strict division between the academic user and the professional programmer.

For one thing, programmers are expensive to hire, surprisingly so to the novice, who will tend to underestimate the amount of time required even for some of the simplest sounding tasks. For another, communication between the programmer and the academic user may be fraught with difficulties, since neither is likely to have the background of the other. (The act of programming consists, one might say, in *translating* an idea or set of ideas from one language into another; this not only requires knowledge of the two languages but also involves considerable interpretation of the original ideas.) As a result of this mutual ignorance some tasks that could be done well on a computer are done poorly or inefficiently — or remain altogether undone by that means. One solution is for the academic user to learn some general-purpose programming language, such as the highly regarded Turbo Pascal (for the IBM PC and others). Another, the one I am addressing here, is to use software that provides a simplified "environment" in which a generic tool can be fitted exactly to the purpose at hand.

The doctrine of user-friendliness has resulted in much that is cute or silly, but it originates from the laudable conviction that computers are now capacious, fast, and cheap enough that they should communicate with their users in something more like human terms. One result of this is the appearance of these generic software tools, such as dBASE II/III and Nota Bene, designed to be useful without the necessity for programming — but allowing for it.

The sophisticated academic user is likely to want to do things with commercial packages that the designers never considered. Academics are specialists by nature; this holds true in their requirements for software as well as in other things. Thus it is an open question whether anyone can provide, for example, a package for keeping and retrieving research notes that will be

continued...

Microcomputer Software continued

completely satisfactory to everyone, though there is much common ground. In this case, the choice is between using a tailored package that does only approximately what you want or writing your own package in the programming language of a general-purpose database manager. The latter is sometimes the better alternative.

Rather than asking for packages that fit everyone's specific needs, academics may be better off requesting-- or sponsoring-- better general purpose tools and then preparing themselves to use them. Again, dBASE II/III is a good example: it is limited for textual purposes but in other ways is a powerful package that can be used well for many purposes never envisioned by the vendor. Its design could be the basis for something very good indeed.

My primary purpose here is to draw your attention to the value and significance of a facility for programming in packages that offer it. Such a facility should, I think, be valued highly in principle; even if you never intend to aspire to the honourable title of "programmer" in this limited sense, you can benefit from the programming done by others. (It is easy to imagine a community of Nota Bene users, for example, building up a library of clever programs for general distribution.) Then, too, you may find that with experience a former aversion to programming turns into a curiosity about it, and then into a desire to unleash more of the considerable potential your microcomputer has for accomplishing useful work.

Dr. Willard McCarty

Announcing Publication of the Guide

As of 2 October the UTCS Information Office has copies of the *Academic's Guide to Microcomputer Systems* available for sale at $13.00 each. Additions and revisions to the *Guide* will be posted first on our Microcomputer Bulletin Board Service and then incorporated in subsequent editions of the entire document. We hope to issue new editions approximately every six months.

Although not bound as such, the *Guide* is in fact a book of just over 200 pages. As many of you may know from reading previous issues of *COMPUTERNEWS*, the *Guide* attempts to be a comprehensive introduction to microcomputer systems as they apply to an academic environment. The first edition is only a first approximation of that ideal, but with the help of our readers we plan to augment and improve the *Guide* steadily. Cooperation is essential to a project of this kind, so we encourage all kinds of constructive criticism. A form for this purpose is provided at the end of the document.

One immediate defect you are likely to notice is the absence of an index. We plan to supply one as soon as possible. Meanwhile subject matter may be located by use of the detailed table of contents.

Individuals outside the University of Toronto may order copies of the *Guide* by writing to Ms. Dale Wright, Information Office, University of Toronto Computing Services, 255 Huron Street, Room 350, Toronto, Ont., Canada M5S 1A1. Payment should be in Canadian funds. Canadian residents please add $2.50 per copy for handling and surface mail postage, U.S. residents $5.00, and overseas residents $6.00.

Dr. Willard McCarty

Using SCRIBE Efficiently Saves Time and Money

There are probably as many different ways to use SCRIBE as there are SCRIBE users. However, small differences in approach can make large differences in the cost and the effort required to produce a formatted document. The simplest approach to saving time and money when using SCRIBE is to identify what your costs are at each of the four stages of the text process, and then to take steps to keep those costs at a minimum. The discussion below focuses on SCRIBE on CMS only.

Inputting Text

The simplest, and yet longest, stage of the text process is the input of your text along with the SCRIBE commands, so that your document is stored in files on CMS. The inputting cost depends on the time required to do the typing. A consistent 60 wpm typist can input the equivalent of about six formatted pages of text per hour. A 30 wpm typist will average about half of that. When just typing in text, you pay for terminal connect time, disk input/ouput, and virtual memory usage. Since the hourly connect time charge is the only constant cost of the three, it is least expensive to have your text input as quickly and correctly as possible. Inputting six pages per hour costs about 32 cents per page. Inputting only three pages per hour would cost almost twice as much per page. (The connect time charge would remain the same.) Storing your text involves online storage charges. Storing up to 200 pages costs 26 cents per day.

Revising Text

Revising text online involves the same basic costs as inputting text. In addition, more CPU usage is involved in moving or copying blocks of text, in searching for character strings, or in deleting and restoring lines. Depending on the number of revisions, this stage of text processing can cost one, two or even three times as much as the input stage.

Formatting Text

The actual per page cost of formatting fluctuates according to the complexity of the formatting, the number of pages, the number and nature of the errors encountered, and the intended output device. A 100 page document with extensive notes and bibliography may cost 35-50 cents per page to format, while a 100 page document with notes but no bibliography may cost only 20 cents per page. Although in most cases the cost per page decreases as the number of pages increases, there are variations because of the complexity of the formatting requested. Formatting mathematical equations is much more complex than formatting paragraphs of text; when they are included in a document, the cost is higher again. In addition, formatting a document for pseudotypesetting is more expensive than formatting it for laser line printing.

Printing Text

Printing costs are relatively fixed, making it fairly easy to determine what it will cost to print a formatted document. The two types of printing available on CMS are laser line printing and pseudotypesetting. Laser line printing costs range from 2.3 to 5 cents per page; pseudotypesetting costs between 5 and 10 cents per page. A variety of character sets and printing formats are available for laser line printing. The double-sided two-up format is an inexpensive way to print proof copies of formatted documents. Pseudotypesetting provides the quality necessary for final versions.

Sample Cost Breakdown for a 100 page Document

Input of text at 60 wpm	$ 32.00
Revision of text (same as above)	$ 32.00

continued...

Using SCRIBE continued

Formatting of text using SCRIBE (3 SCRIBE runs):

1. Uncomplicated text (20¢/p x 3)	$ 60.00
2. Text and bibliography (35¢/p x 3)	$105.00
3. Text with mathematics (50¢/p x 3)	$150.00
4. Text with math and bibliography (65¢/p x 3)	$195.00

Printing:

Laser line printing (2 drafts) maximum	$10.00
Pseudotypesetting (1 copy) maximum	$10.00

Totals

1. Uncomplicated text	$144.00
2. Text and bibliography	$189.00
3. Text with mathematics	$234.00
4. Text with math and bibliography	$279.00

From the example above, you can see that the most variable cost in the entire process is the formatting of the text. Most people can reduce their total costs by decreasing the number of times they format a single document.

Strategies for Controlling Costs

In the Input and Revision Stages

1. The costs of inputting and revising your text can be minimized by typing in your text as quickly and correctly as possible. Revisions planned on a printout of the document generally take less time than those input while proofing the text from a terminal screen.
2. Always divide your document into a number of small files of 25 or 30 pages and link the files using SCRIBE's @part command. In small files it is easier and less expensive to catch and eliminate formatting errors. Also, if the text is organized in small files and the @part command is used, then it is possible to correct last minute errors without having to reformat the entire document. This is especially important since the formatting stage constitutes the most expensive portion of the total cost.

In the Formatting Stage

1. The easiest way to reduce your formatting costs is use the SCRIBE command as few times as possible. In some cases, this requires a little planning and some extra work during the inputting and revision stages.
2. Before running SCRIBE, check that all formatting commands are correctly spelled and have matching open and close delimiters. Most SCRIBE errors result from missing or unmatched closing delimiters. Checking for delimiters will eliminate having to reformat a 100 page document because of an omitted closing delimiter on page 25.
3. Before processing the entire document, format each section of the document to make sure it is error-free. It is less costly to find a missing delimiter on page two of a thirty page document than to find it on the same page of a 100 page document.
4. Respond to all error messages from SCRIBE before reformatting the document. A document with half the errors corrected will still have half the errors. Advising Services at 978-HELP can help if you do not understand SCRIBE's error messages.
5. If you have prepared your document in sections, and used the @part command, then you may not have to reformat the entire document because of one or two small errors. If in doubt, contact Advising Services for help.

Other methods of reducing the formatting costs are related to producing less expensive SCRIBE runs rather than fewer SCRIBE runs.

1. In the early stages of your document when you need a proof copy to check for content more than formatting style, you can format your document using a very simple document type, such as @make[pagedfile] or

continued...

Using SCRIBE continued

@make[text]. More complex document types such as @make[thesis] or @make[manual] cost more to process. For the same reason, you can also eliminate indexing, cross-referencing, and bibliographies in the early stages in order to process the file less expensively.

2. If producing a bibliography, format it once separately from the rest of the document to make sure it is error-free. Bibliographies require extremely close attention to delimiters and commas and should be checked carefully before processing. When the bibliography is error-free, you can refrain from processing it until the final formatting of the document.
3. Formatting a document for pseudotypesetting is marginally more expensive than formatting it for laser line printing. When producing draft or proof versions, use @device[lpt] whenever possible. When the entire document is formatted, you can change to @device[x8700]. This will help save on printing costs.
4. If you are testing a new command or sampling a document type, process only a few pages of text. This holds true, as well, if you are modifying SCRIBE commands in any way.

In the Printing Stage

1. Since laser line printing is less expensive than pseudotypesetting, you can reduce costs slightly by formatting your documents with @device[lpt] and printing them using the standard two-up two-sided forms. This is most suitable for draft or proof copies.
2. Pseudotypesetting costs are based on the cpu costs of transferring and translating your document for printing on the 8700 laser printer plus a base charge of 5 cents per page for printing. Whether you print one copy or multiple copies of a document, the cpu charge is the same. Therefore, a single pseudotypeset copy of your document may cost up to 10 cents per page when the cpu cost is taken into account, but ten copies may only cost 6 cents per page when the cpu charge is dispersed over all the copies.
3. Finally, to find out what it is costing you to input, revise, format and print your documents, enter the COST command before and after you embark on one of the stages. The difference between the two total costs will give you an idea of what it is costing you to use SCRIBE.

Patricia Hood

Statistical Computer Users Group General Meeting

The Statistical Computing Users Group will have a general meeting on Wednesday, October 23, 1985, from 12:00 noon until 1:00 p.m. in Room 3163 in the Medical Sciences Building. The main topic of discussion will be SAS under PC-DOS. The SNAC group at UTCS will explain the procedures for acquiring this product through UTCS. If SAS Institute ships the base modules in time, there will also be a short technical presentation of some of the features of the base module of SAS under PC-DOS.

This meeting is open to all those affiliated with the University of Toronto who have an interest in statistical computing.

Bill Fehlner

New Version of Waterloo FORTRAN Installed on CMS

UTCS has installed the University of Waterloo's WATFOR-77 compiler on CMS as a Class A product. WATFOR-77 is an implementation of the FORTRAN 77 language based on Waterloo's well known WATFIV compiler.

Many UTCS users are well aware of how useful WATFIV has been for the fast compiling and debugging of FORTRAN programs. Many programmers find it useful to debug using WATFIV and then run their production jobs with VS FORTRAN. WATFOR-77 is based on both WATFIV and FORTRAN 77; it offers many new features that increase FORTRAN efficiency and productivity, including:

- Compilation directly into memory, thus avoiding the compile-link-execute steps.
- Comprehensive explanatory error messages and execution time diagnostic support.
- Subroutines in precompiled loadlibs can be called, and WATFOR-77 will as an option produce object files.
- New structured programming statements: WHILE-ENDWHILE, LOOP-UNTIL, and SELECT.
- Source statements can be in upper- and/or lower-case.
- An interactive debugger is available that can be selected at execution time.

To access WATFOR-77 on CMS, simply enter:

```
GETME WATFOR77
```

More information is available from the *WATFOR-77 Language Reference Manual and User's Guide.* A reference copy of this manual is available in the UTCS Information Office Library, or you can order a copy through the UTCS Information Office.

Paul Shindman

UTCS Noncredit Short Courses

UTCS offers a number of short, noncredit courses on the use of various products and services that we support. These courses are available to students, faculty and staff of the University of Toronto, as well as to other users of our system.

Complete course descriptions for all noncredit courses offered at UTCS are available at the Information Office, Engineering Annex, Room 206, and at the Accounting Services Office, McLennan Labs, Room 337.

Due to the limited seating capacity in the Education Facility, and the number of terminals available for our hands-on courses, registration is required for short courses.

Please note that we reserve the right to cancel courses, if registration is too low.

Anyone interested in taking any of these courses must register in person with:

Education Coordinator
Engineering Annex, Room 207
978-4565

A nonrefundable Administration Fee of $10 per course is due at the time of registration. It may be paid by cash, cheque or on a Customer Account Number (CAN).

(Anyone interested in credit courses should contact the Dept. of Computer Science at 978-6360).

The following courses are offered at the end of October and the beginning of November:

continued...

UTCS Short Courses continued

FORT/CMS101 - Introduction to CMS for FORTRAN Users
Date: October 7-11, 1985
Time: 1:30-4:30 p.m.

JCL101 - IBM Job Control Language for Beginners
Date: October 21-25, 1985
Time: 2:00-3:00 p.m.

SAS201 - Intermediate SAS
Date: October 21-25, 1985
Time: 3:00-4:00 p.m.

TXT/CMS101 - XEDIT and SCRIBE on CMS
Date: November 4-15, 1985
Time: 2:00-4:00 p.m.

Irene Rosiecki

Hours of Services

Thanksgiving Day

	October 12 (Saturday)	**October 13 (Sunday)**	**October 14 (Monday)**
IBM MVS GPJS(Classes B and E, Calcomp)	10:00-18:00	10:00-18:00	closed
IBM MVS GPJS(Class A, WYLBUR, APL, TSO)	10:00-18:00*	10:00-18:00*	unattended
IBM VM/CMS	10:00-18:00*	10:00-18:00*	unattended
GP UNIX	10:00-18:00*	unattended	unattended

Normal hours of service will resume on Tuesday, October 15, 1985.

* Running unattended outside these hours.

For NORMAL HOURS OF SERVICE see UTCS Terminal & Advising Sites at the back of this issue of COMPUTERNEWS.

In the event of any changes to this schedule, a notice will appear in HOTNEWS one week prior to the holiday.

Change Committee

Changes to the Academic IBM MVS Machine Services

1. PDF panels were installed on August 12 to improve the user interface for FORTRAN.
2. SAS Version 5 was installed on MVS for user test on September 4.
3. SPSSX 2.1 on MVS was released for production on September 4.
4. SAS/GRAPH Version 5 was installed on MVS for user test on September 12.
5. The new 3480 tape cartridge drives are being used for the weekly disk backups as of September 7.

Changes to Academic VM/CMS Machine Services

1. The automatic porting of month-end VM charges to UTCS' accounting program was completed on September 3. This will allow for more timely charging.
2. Charging for temporary disk storage commenced on September 9. This was announced through a broadcast message on VM/CMS and Accounting News in the CAN/BPOA Reports.

Changes to Other Systems and Services

1. Domain routing for uucp mail on the GP UNIX was implemented on September 9 and was announced in mail and readnews.
2. The optical fibre extension from Sydney Smith to Robarts was completed on August 14.
3. IBM's relational database system, DB2, was installed on the Administrative MVS system on August 17.

Beverly Scarborough

Personnel Changes

The month of August brought about changes for many of UTCS' personnel. **Steve Cochrane, Keeny Leung,** and **Frank Maiolino,** all from Operations, have accepted positions in industry.

Stella Martin, our Tape Librarian, also from Operations, has pulled up stakes and moved to Philadelphia.

Diane Mitchell, who was UTCS' Statistics Specialist, resigned to commence graduate studies at the University of Guelph.

Michelle Mulé, best known for her lively presence in the Management Office, has accepted a position with the Personnel Department.

Welcome to **Ron Tyro,** who has joined UTCS Operations as an Operator I.

Congratulations are extended to all of you.

Elizabeth Weitmann

Recent Acquisitions in the Computer Library

Abrams, Marshall.
Computer networks: a tutorial,
by M. Abrams and I.W. Cotton, 4th ed.
New York, IEEE, 1984.

American Institute of Graphic Arts.
Symbol signs.
New York, Hastings House, 1982.

Feinler, Elizabeth, ed.
ARPANET protocol handbook, ed. by
E.Feinler and J.Postel.
San Francisco, Data Composition, 1978.

Huggins, W.H. & D.R. Entwisle.
Iconic communication: an annotated
bibliography.
Baltimore, Md., The Johns Hopkins
University
Press, 1974.

International Conference on Very Large
Data Bases.,
11th, 1985.
Proceedings.

International Joint Conference on Artifical
Intelligence, 1985.
Proceedings of 9th Conf. 2 vols.

Kulisch, U.W. and Miranker, W.L., eds.
A new approach to scientific computation.
Orlando, Academic Press, 1983.

McKeown, K.R.
Text generation: using discourse strategies and
focus constraints to generate natural language
text.
Cambridge, University Press, 1985.

Mehlhorn, Kurt.
Data structures and algorithms.
Berlin, Springer-Verlag, 1984. 3.v.
v.1: Sorting and searching.
v.2: Graph algorithms and NP-completeness.
v.3: Multi-dimensional searching and
computational geometry.

Miller, R.K.
Artificial intelligence applications for
manufacturing.
Madison, Ga., SEAI Tech. Pubs., 1985.

Monk, Andrew, ed.
Fundamentals of human-computer interaction.
London, Academic Press, 1984.

Padlipsky, Michael A.
The elements of networking style and other
essays and animadversion on the art of
intercomputer networking.
Englewood Cliffs, N.J., Prentice-Hall, 1985.

Perterson, J.L. and Silberschatz, A.
Operating system concepts, 2d ed.
Reading, Mass., Addison-Wesley, 1985.

Shafer, Glenn.
A mathematical theory of evidence.
Princeton, University Press, 1976.

Symposium on Computer Arithmetic, 7th,
Urbana, Illinois, June 1985.
Proceedings, ed. by Kai Hwang.
New York, IEEE, 1985.

Williams, B.O. and Burch, J.L., eds.
Human foundations of advanced computing
technology: the guide to the select
literature.
Lawrence, Kansas, The Report Store, 1985.

Winston, P.H. and Horn, B.K.P.
LISP. 2d ed.
Reading, Mass., Addison-Wesley, 1984.

(Journal)
Human-computer interaction.

Stephanie Johnston

Technical Reports Recently Received in DCS Library

Carnegie-Mellon University.

Lehman, Philip L.	Systolic arrays for rapid processing of simple database transactions.
Lehr, Theodore F.	The implementation of a production systems machine.
Bruegge, Bernd.	Debugging Ada
Garlan, David.	Flexible unparsing in a structure editing evironment.

Palo Alto, Digital Systems Research Center.

Ramshaw, Lyle.	Eliminating go to's while preserving program structure.

Urbana, University of Illinois

Rendell, Larry.	Genetic plans and the probalistic learning system: synthesis and results.
Dershowitz, Nachum.	Termination of rewriting.

Newcastle upon Tyne, University.

Randell, B.	System design & structuring. #198.
Linton, A.	Networking issues in the Newcastle connection. #199.

Stanford, University.

Pratt, Vaughan.	Some constructions for order-theoretic models of concurrency.
Hershberger, J. and Mayr, E.	Shortest paths in a shuffle-exchange network.
Apers, P. and Wiederhold, G.	Transaction classification to survive a network partition.

Stephanie Johnston

Documents at UTCS

All vendor-produced documentation may be ordered through the UTCS Information Office, Room 206, Engineering Annex. UTCS documents and selected vendor documents are also stocked there for purchase. Whenever feasible, documents are made available online, and users are encouraged to print their own copies. On the MVS and VM machines, special commands have been provided for this purpose.

To print online documents on:

IBM MVS
WYLBUR users type " do document"
TSO users type "help document"
APL users type ")LOAD 1 UTCSGUIDE<CR>HELP"

IBM VM/CMS
type "help document"

GP UNIX
use *ipr* command

See examples at the end of the next page.

UTCS Documents in hardcopy

New:
Academic's Guide to Microcomputer Systems
Character Sets for Highspeed Printing

Previously announced:
UTCS GUIDE TO PRODUCTS AND SERVICES: Introduction
UTCS GUIDE TO PRODUCTS AND SERVICES: Basics
UTCS GUIDE TO PRODUCTS AND SERVICES: Accounting
UTCS Catalogue: Access, Part 1
UTCS Catalogue: Access, Part 2
UTCS Catalogue: IBM MVS Utilities
UTCS Catalogue: Numerical Products
UTCS Catalogue: Statistics Products
UTCS Catalogue: Storage
UTCS Catalogue: Text Products
UTCS Guide to Census Tapes
UTCS Guide to File Transfer Service
UTCS Guide to KERMIT
UTCS Guide to Mainframe File Transfer Facility
UTCS Guide to Text Processing on GP UNIX

UTCS Documents online	MVS MANUAL	CMS LISTING	GP UNIX	Forms Code
Previously announced:				
UTCS GUIDE TO PRODUCTS AND SERVICES: Basics	BASICS	BASICS	/usr/doc/utcs/basics	*
UTCS Catalogue: Access, Part 1	ACCESS1		/usr/doc/utcs/access1	*
UTCS Catalogue: Access, Part 2	ACCESS2		/usr/doc/utcs/access2	*
UTCS Catalogue:IBM MVS Utilities	MVSUTIL	MVSUTIL		*
Product-Function List	UTILLIST	UTILLIST		BXQD
UTCS Catalogue:Numerical Products	NUMCAT	NUMCAT		*
Product Function List	NUMLIST	NUMLIST		BXQD
UTCS Catalogue:Statistics Products	STATCAT	STATCAT		*
Product-Function List	STATLIST	STATLIST		BXQD
UTCS Catalogue:Text Products	TEXTCAT	TEXTCAT	/usr/doc/utcs/textcat	*
UTCS Guide to APL	APLGD			*
UTCS Guide to APLXFR	APLXFR			*
UTCS Guide to BMDP	BMDP	BMDP		*
UTCS Guide to Census Tapes	CENSUS	CENSUS	/usr/doc/utcs/census	*
UTCS Guide to File Transfer Service	FTS			*
UTCS Guide to GP UNIX			/usr/doc/utcs/gpunix	*
UTCS Guide to GPJS	GPJSX	GPJSX	/usr/doc/utcs/gpjs	*
UTCS Guide to Highspeed Printing	PRINT	PRINT	/usr/doc/utcs/print	*
UTCS Guide to IBM MVS Online Storage	IBMDISK			*
UTCS Guide to KERMIT	KERMIT	KERMIT	/usr/doc/utcs/kermit	*
UTCS Guide to Mainframe File Transfer Facility	MFTF			*
UTCS Guide to SAS	SAS	SAS		*
UTCS Guide to SCRIBE		SCRIBE	/usr/doc/utcs/scribeguide	*
(For printing instructions, see page 1 of document)				

Documents at UTCS continued

UTCS Documents online	**MVS MANUAL**	**CMS LISTING**	**GP UNIX**	**Forms Code**
UTCS Guide to Series/1 Terminal Use	SERIES	SERIES		*
3270 Emulation:				
UTCS Guide to Cybernex APL100 and Volker Craig VC404	CYBER	CYBER		*
CM1520	DM1520	DM1520		*
Hardcopy Terminal	HARDCOPY	HARDCOPY		*
IBM 3101	IBM3101	IBM3101		*
IBM PC KERMIT	PCKERMIT	PCKERMIT		*
SOROC IQ	SOROC	SOROC		*
VT52	VT52	VT52		*
VT100	VT100	VT100		*
UTCS Guide to SPSS	SPSS	SPSS		*
UTCS Guide to SUBUTILS	SUBUTILS	SUBUTILS		*
UTCS Guide to Text Processing on GP UNIX			/usr/doc/utcs/text	*
UTCS Guide to TFW.MAK in SCRIBE		TFWMAK	/usr/doc/utcs/tfwguide	*
UTCS Guide to TSO (Draft)	TSOGD			*
UTCS Guide to UTDSUTIL	UTDSUTIL	UTDSUTIL		*
UTCS Guide to VM/CMS	CMSGD	CMSGD		*
UTCS Guide to WYLBUR	WYLINTRO			*
UTCS WYLBUR Tutorial	WYLTUTOR			*
Other Documentation online:				
Waterloo SCRIPT				
Reference Manual	WSCRPTRF	WSCRPTRF		YXLC
User's Guide	WSCRPTUG	WSCRPTUG		YXLC
GML USER'S Guide	GMLUG	GMLUG		YXLC

* *Recommended forms code for the 8700 is YXLE unless otherwise stated.*

In these examples, the document to be printed is the UTCS Guide to Census Tapes (MANUAL/LISTING=CENSUS). <CR> means carriage return.

TSO: document census forms(yxle) <CR>

WYLBUR: do document <CR> and respond to the prompts.

CMS: document <CR> <CR>
laser census listing (forms yxle <CR>

GP UNIX: nohup ipr -8p -fyxle /usr/doc/utcs/census & <CR>

Consulting and Enquiries

Applications Support & Advising Supervisor	Alex Nishri	MP257	7109
External Marketing Consultant	Ihor Prociuk	MP350	6875
Erindale College	Joe Lim	2035	828-5311
Scarborough College	William Barek	S626	284-3173

General Enquiries	Dale Wright	EA206	4990
Account & Access Code Enquiries (U of T)	Agatha Stevens	MP337	8703
Account & Access Code Enquiries (External)	Sylvia May	MP337	7148
Tape Library (Academic Services)	tba	MP368	7319
Tape Library (Administrative Services)	Miranda Fong	MP368	6693
Terminal Rentals	tba	SF4306	3787
U of T Computer Library	Stephanie Johnston	EA206	2987

Central Advising Office (Appointments)	HELP
Central Advising Office (Phone-in)	HELP
Microcomputer Support Group(MSG)	8701
Numerical/Statistical Advising(SNAC)	STAT
System Status Enquiries (GP UNIX)	4318
System Status Enquiries (IBM)	7393

300 Baud Interactive Services	6200
1200 Baud Interactive Services	3959
DATAPAC	4320, 0056
Telenet	0302043200056
Tymnet	<backspace> DPAC;302043200056

UTCS Directory

Director	Dr. Warren Jackson	MP350	8948
Associate Director	Eugene Siciunas	MP350	5058
Managers			
Communications & Technical Support	Norman Housley	SF4306	4967
Internal Systems & Administration	Ron Vander Kraats	MP350	4428
Operations	Dr. Bob Chambers	MP350	7092
Systems	Bill Lauriston	MP331	3579
User Interface	Don Gibson	MP350	7331

Committees on Computing

UTCS Board	Chairman	Prof. D.M. Nowlan	4984
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Committee on Computer Networks & Telecommunications	Chairman	Mr. A. Heyworth	4936
Committee on Computing Facilities & Services	Chairman	Prof. J.D. Bossons	8626
Natural Language Processing Steering Committee	Chairman	Prof. I. Lancashire	828-5273
UTCS Users' Committee	Chairman	Prof. J.T. Stevenson	6930
	Secretary	Ms. C. Pereira	4463

UTCS Terminal and Advising Sites

Names and Locations

- **Central Advising Office (CAO), 978-HELP**
- **Education Facility (Educ)**, McLennan Labs, 60 St. George St., Room 221
- **Engineering Annex (EA, CDF)**, 11 King's College Road, Rooms 103, 104, 107, 107B, 201, 203.
- **Erindale College (Erin), 828-5339**, Mississauga Road, Erindale Campus, Rooms 2005, 2039, 2045
- **Robarts**, Robarts Library, 130 St. George St., Room 1061A
- **Scarborough College (Scar), 284-3122**, Military Trail, Scarborough Campus, Rooms S624, S625, S627, S628, S628A
- **Sidney Smith (Sidney)**, 100 St. George St., Rooms 1071, 1073, 2105
- **St.Michael's College**, 121 St. Joseph St., Room 107
- **Trinity College**, 6 Hoskins Ave., Room 024
- **Victoria University**, 73 Queens Park Cres., Room 005.

Sites	Hours of Access				Restrictions*	Advising
	Mon-Thurs	Fri	Sat	Sun		
CAO	10:00-18:00	10:00-18:00	closed	closed	Research	978-HELP
CDF	24 hrs	24 hrs	24 hrs	24 hrs	Undergrads	No
EA	24 hrs	24 hrs	24 hrs	24 hrs	None	978-HELP for Research
Educ	24 hrs†	24 hrs†	24 hrs†	24 hrs†	Research**	978-HELP
(outer)	24 hrs†	24 hrs†	24 hrs†	24 hrs†	Research	978-HELP
Erin (2039)□	9:00-17:00	9:00-17:00	12:00-16:00	12:00-16:00	Research	Rm 2005
(2045)	24 hrs	24 hrs	24 hrs	24 hrs	Undergrads	Rm 2005
Robarts	8:30-24:00	8:30-24:00	9:00-17:00	13:00-22:00	None	978-HELP for Researh
Scar	9:00-24:00	9:00-24:00	10:00-17:00	closed	Research	Rm S626
					Undergrads	Rm S626-A
Sidney	7:00-24:00	7:00-24:00	7:00-24:00	7:00-24:00	None	978-HELP for Research
St.Michael's	24 hrs	24 hrs	24 hrs	24 hrs	None	Arranged by College
Trinity	8:00-22:00	8:00-22:00	8:00-22:00	8:00-22:00	None	Arranged by College
Victoria	8:30-23:00	8:30-23:00	closed	closed	None	Arranged by College

* Research includes graduates, faculty, staff. ** May be unavailable due to UTCS courses. □ key access available.

† Building open Mon. - Thurs. 7:00 - 22:00, Fri. 7:00 - 17:00. Building closed Sat. & Sun.

Advising Hours

CAO	Monday through Friday, 10:00 - 18:00
Scar	Monday through Friday, 09:00 - 17:00
Erin	Mon. 09:00-17:00, Tues.-Thurs. 09:00-20:00, Fri. 09:00-17:00.

Services Available
(Y=yes, N=no)

	Keypunch	PACX	Printers	Network Terminal Server	DCS Micros
CDF	N	N	Y	N	N
EA	Y	N	Y	Y	N
Educ	N	Y	N	N	N
Erin	N	Y	Y	Y	N
Robarts	N	Y	Y	N	Y
Scar	N	Y	Y	Y	N
Sidney	N	N	Y	Y	Y
St.Michael's	N	Y	Y	N	Y
Trinity	N	N	Y	N	Y
Victoria	N	Y	Y	N	Y

UTCS Services

The principal mandate of UTCS is to plan, implement, and operate central computer facilities and "common-carrier" data networks, and to plan and support divisional, departmental or project computer facilities as requested.

UTCS Centrally Owned and Managed:

Systems

IBM MVS

- TSO, WYLBUR, APL, Batch
- 4381-R03 dual processor, 32 megabytes of memory
- MVS operating system

IBM VM/CMS

- provides General Purpose Timesharing, access to NetNorth, BITNET, and EARN networks
- 4381-P02 processor, 16 megabytes of memory
- CP operating system, VM/SP Release 3
  CMS timesharing system, VM/SP Release 3
  RSCS spooling system, Release 3

GP UNIX

- provides General Purpose Timesharing using Berkeley UNIX, 4.2 BSD
- VAX-11/750, 5 megabytes of memory
- typesetting hardware (CAT/8)
- offers USENET "news" and electronic mail to most uucp sites

Services

Communications & Technical Support
Primary Phones: 978-3787, 978-4967

- Communications Group provides communications systems, terminals, modems, data channels: consulting and installation.
- Field Service Group installs and maintains communications and computer systems on a contract basis or on a cost-per-call basis.
- provides consulting on computer systems technology and installs computer systems
- provides access between the IBM systems and machines using UNIX, VMS and other operating systems. Ethernet and Pronet technologies are used over various transmission media including optical fibre. More basic communications techniques are also used for moderate speed links.
- provides access to NetNorth (BITNET), the North American Universities Network, and USENET, the UNIX networking fraternity.
- will provide a communications solution to department needs on a contractual basis.

User Interface Group
Primary Phone: 978-HELP

- provides advising, consulting and documentation on:
  - command languages including CMS, TSO, WYLBUR, JCL and UNIX
  - high level languages including FORTRAN, APL and PL/I
  - packages and libraries including SAS, SPSS-X, BMDP, IMSL and NAg
  - editors and formatters including XEDIT, TSO, WYLBUR, ed, SCRIBE, nroff/troff
- installs and maintains application packages
- provides courses on the more popular services
- provides general micro support:
  - selection consulting for hardware and software
  - Micro Lab for evaluation of hardware and software
  - advice on University discounts
  - media conversion and data transfer
  - operates UTCS Microcomputer Bulletin Board System

Facilities Managed by UTCS

Administrative Computing

- provides administrative IMS/VS,DB/DC,DB2, Batch and TSO
- 4381-R03 processor, 32 megabytes of memory
- MVS operating system

UNIX SAS (Statistical Analysis Services)

- provides UNIX Statistical Analysis Service (Dept. of Statistics only)
- PDP-11/70, 4 megabytes of memory
- UNIX Seventh Edition

Computer Disciplines Facility/VAX

VAX-11/780 (4 megabytes of memory)
VAX-11/750 (4 megabytes of memory)
VAX-11/750 (3 megabytes of memory)

- provide Computer Science interactive access
- UNIX (Berkeley Unix 4.2BSD)

Computer Disciplines Facility/PC

- 82 TI Professional Computers connected in a Local Area Network
- provides introductory Computer Science instruction
- MS-DOS with Turing environment

Scarborough College Systems

VAX-11/750 (5 megabytes of memory)
VAX-11/750 (3 megabytes of memory)

- provides instructional access using UNIX (Berkeley Unix 4.2BSD)

Erindale College Systems

VAX-11/780 (4 megabytes of memory)

- provides instructional access using VMS
- provides research access

VAX-11/750 (5 megabytes of memory)

- provides instructional access using UNIX (Berkeley Unix 4.2BSD)

Private Funding - Alumni Affairs

VAX-11/750 (6 megabytes of memory)

- provides database services to the owner departments using VMS

EPAS Facility

- 4361-5 processor, 12 megabytes of memory
- provides general VM/CMS services to the owner departments

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